DEMAND FOR HOUSING IN GHANA

BY

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DECLARATION

I, GODWIN YAO DOGBEY, hereby declare that this thesis consists entirely of my own work and that no part of it has been presented for another degree elsewhere.

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DEDICATION

This work is dedicated to the glory of God and to the memory of my mother the late Madam Gbeda Attipoe.

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Despite the able supervision received from my supervisors, I must say that I accept all errors as wholly mine.

GODWIN YAO DOGBEY.

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ABSTRACT

This study seeks to illuminate in a modest way the housing market in Ghana through an analysis of the demand behaviour. Housing demand has been approached from a macro-economic standpoint using a simple stock-adjustment model.

The Ghanaian housing market, like those of most developing countries is imperfect. Households in income categories other than the highest income do accept housing which does not meet their expectations. Supply of housing lags seriously behind demand for it. Consequently, the existing stocks are strained beyond their capacity. Rural housing problems are identified as qualitative. Mortgage finance in respect of housing has not been very effective and, in most cases, therefore private acquisition of a house has been on cumulative basis through personal savings.

Empirically the demand for housing in Ghana has been found to be elastic with respect to income. Thus, income increases will generate housing expenditures increasing as a proportion of income.

In the light of the above, the study suggests that efforts must be made to step up investment in housing in order to close the gap between the desired and actual stocks of housing. Constraints that impair supply expansion require identification. Many government policies such as land policy, rent control, housing standards and building codes need overhaul if ever housing supply is to be responsive to demand.

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CHAPTER ONE

INTRODUCTION

1.0 Motivation

Cities in developing countries have expanded at extraordinary rates, often compressing into decades the urbanization process that has taken centuries in developed countries. Governments in order to cope with this expansion have devised a wide range of policy instruments to influence the rate and character of this growth. Some of the policies are directed at meeting the needs of people for shelter and urban services, and to allocate resources in ways that redistribute both the costs and benefits of urban growth. Ideally, such policy formulation should be informed by a careful understanding of the behaviour of urban markets; in fact, little information on market behaviour is available to the policy makers in developing countries (Mayo, Malpezzi and Gross, 1985).

Housing is one of the basic necessities of life. Thus, the provision of adequate housing is an important goal both in welfare and economic terms. Apart from being a fundamental human right, adequate housing plays an important role in national economic development.

The attainment of this goal, however, has been difficult, requiring a clearly stated national policy as well as the continued, innovative and co-operative efforts of all institutions involved in the provision of housing. These institutions range from the financial, industrial and constructional sectors as well as traditional institutions in land tenure.

A good housing programme provides substantial employment opportunities and builds up a reserve of skilled labour and artisans who would be available for other

related constructional works. It, thus, stimulates the economy by the usual 'multiplier effect'.

From a well defined, organized and executed housing scheme, other social benefits accrue. In situations where adequate shelter with good water supplies, proper sanitary arrangements for the disposal of refuse in a well-planned environment exist, the health status of the people is well known to have been markedly improved.(WHO, 1974).

Housing development has not been at par with housing needs. An under supply of 'adequate' dwellings has existed ever since people began to congregate in towns and cities. It is only since the twentieth century, however, that the urban housing problem has been recognized as truly universal, (Gebler and Burns, 1977). Now, housing deficiencies - physical dwelling shortages or deteriorated neighbourhoods, are clearly seen in global scope as costing too high for large segments of the population. Nevertheless, there has also been a growing though still less than universal recognition of the fundamental obstacle to their prompt eradication. Resources are limited relative to needs even in the wealthy countries, let alone those struggling to attain average levels of living beyond mere subsistence. There exist nutritional, health, transportation and schooling gaps in addition to housing gaps. Vast amounts of capital are needed for the expansion of food resources to sustain rapidly increasing populations and for the development of industries to close still another 'gap' - that between available jobs and the people able and willing to work.

Housing seemed to have obtained a favoured position among social priorities, in the past half century, at varied standing among countries and at different periods in time. Yet it competes with other sectors for public and private capital investment. The

promotion of domestic energy supplies and environmental programs have recently been added to the priority lists of earlier years. Consequently, housing policy is increasingly viewed as part of social and economic development policies which have multiple objectives none of which can be attained hurriedly without neglecting others. Thus, housing continues to be enmeshed in the awesome problem of resource allocation no matter whether allocation is subject to deliberate planning or controlled by the 'invisible hand' of impersonal market forces.

Ghana's housing problem reveals symptoms similar to those of other countries experiencing rapid urbanization. There is urban migration; the rise of a renter class; the growing disparity between the cost of urban shelter and what the worker can afford; the rising pressure of housing shortage and overcrowding; the diminishing ability of the urbanizing population to build housing with its own hands as in the old rural environment: an increase in squatting and an emerging insecurity of urban tenure; an increase in the number of owners and parcels, and conflicts over titles of land as new forms of tenure replace the old. (UN 1957).

In rural Ghana the problem has been identified as emanating from 'the relatively low quality of the structures coupled with unhygienic surroundings'[1]. Thus, the majority of people live in sub-standard rural settlements under deplorable conditions. The paradox, however, is that in most urban areas in Ghana today, there is co-existence of affluence and concentrations of poverty; high quality housing structures mixed with low quality ones.

1. Ghana, Republic of: 2-Year Development Plan for the period mid 1968 to mid 1970.

Lack of synchronization between housing supply and demand manifests itself in the huge sums of money that landlords request as rent advances for rental units.

Public sector involvement in housing has been used as a means of regulating the market so as to make housing affordable to the low and middle income earners. This is usually done on equity grounds since important components of housing package - access roads, utilities and to some degree transport are 'natural monopolies' that require public ownership or regulation if supply is not to be restricted so that monopoly profits may be reaped (World Bank, 1975). However, this intervention has not been seen, usually, as making any appreciable impact in the Ghanaian housing market.

The Ministry of Works and Housing is the main government arm responsible for housing in Ghana. Linked with it are the following organizations and bodies involved in housing development:

1. The Ghana Water and Sewerage Corporation
2. The State Construction Corporation
3. The State Housing Corporation
4. The Architectural and Engineering Services Corporation
5. Public Works Department
6. Tema Development Corporation
7. Public Servants Housing Loan Scheme Board
8. Rent Control Department
9. Technical Services Centre

Other para-statal organizations such as the Social Security and National Insurance Trust (S.S.N.I.T), State Insurance Corporation (S.I.C) and Real Estate Developers Corporation (REDCO) as well as private estate companies (eg. Parakuo Estates) are

involved in housing development.

This study seeks therefore to contribute to an understanding of the Ghanaian housing market; in particular housing demand. The demand behaviour is investigated from a macro-economic standpoint. From this perspective, the demand investigation is conducted within the framework of stock-adjustment. This is done particularly to bring into focus demand - investment relationship in housing research.

1.1 Objectives

The objective of this work is therefore to examine an aggregate stock-demand for housing in Ghana.

Specifically the study is to,

(i) briefly review housing policy in Ghana,

(ii) present new evidence on housing demand parameters using a simple standard model,

(iii) identify problems in the Ghanaian housing market and their specific bearing on demand,

(iv) offer recommendation for policy making and outline areas for further research.

1.2 Relevance of the Study

There is a dearth of literature on the housing market in Ghana. Though housing has been perceived as a problem sector, not very much has been done by way of research on housing demand in Ghana. The few studies done have also not approached

the problem from an economics perspective.[2] Most estimations were based on need rather than effective demand. Thus, the price variable has been absent in such studies that approach the problem purely from a demographic point of view. These studies stressed that the housing situation and housing needs of the country are determined by population growth and household formation. In fact, they dealt with population projections in relationship with estimating housing needs.

This study therefore may serve as rejuvenation of interest in the housing sector now that it is becoming manifestly clear that housing is moving away from its traditional role of shelter provision into investment good.

Therefore, the findings undoubtedly constitute useful addition to knowledge about the housing sector and serve as a valuable basis for policy formulation and development planning.

1.3 Organization of the study

Chapter two looks at a profile of post-independence housing policies. This qualitatively gives a bird's eye view in assessing the response of demand and supply forces to housing policy changes. A general light is thrown on the Ghanaian housing market. It looks particularly at the extent of public involvement in the housing sector by direct participation or by participation via agencies.

In chapter three the literature on housing demand is surveyed with the intention of adopting and adapting a model for the econometric estimation.

Analysis of housing demand is taken up in chapter four with a brief discussion of the theoretical basis of demand for durable goods. The estimation model is briefly

[2] See for example Tetteh (1972), Antwi (1984).

discussed and results from the regression outlined.

Chapter five summarizes the results and looks at their implications. Policy measures are suggested for consideration and a course for future research directions outlined.

CHAPTER TWO

GHANAIAN HOUSING POLICY AND MARKET IN PERSPECTIVE

This chapter reviews post independence housing policies in Ghana and looks qualitatively at the housing market response to these policies.

2.0 Housing Policy Profile Since Independence.

Housing policy has been critical in determining housing conditions in any given country. The diversities in housing conditions among countries similar in growth or socio-economic characteristics are reflection of differences in housing policies and their administration. Hence, housing policy must be viewed as an important aspect of an overall macroeconomic policy.

A country's general policy framework has important implications for both supply and demand factors influencing housing. Exchange rate, foreign trade and other commercial policies affect the housing market through their impact on a country's overall competitiveness. Monetary policies influence the availability of housing finance. Lack of development of financial institutions for example, means a lack of mortgage funds. Fiscal policies are critical to a country's ability to mobilize resources for growth and the distribution of income. All these policies have spatial dimensions which influence city sizes within each country and the location of residencies and employment within each city. Countries with a poorly conceived overall policy framework cannot expect to deal effectively with their housing problems.

There was no clearly defined national housing policy before independence in Ghana. Hitherto, government housing policy was implemented through the Ghana Housing Corporation (now SHC), the First Ghana Building Society (FGBS), the Roof Loans Scheme which is now facilitated through the department of Rural Housing and Cottage Industries (for detail discussion see appendix one) and the direct provision of government housing to public officials. Supply of government housing for public servants has dwindled in recent years, yet, it still remains a creditable fact that most of the housing for middle and upper income public servants in Ghana has been provided by government.

Few years after independence, it was observed that since housing could add greatly to employment and incomes a national housing policy was necessary. This policy was to be closely related to the level of development of the productive sectors of the economy and observe a rational balance in the allocation of investment between housing and the more directly productive investments.

As part of a Seven - Year National Development Plan for 1963/4 - 1969/70, therefore, housing was given a recognition. Housing was considered as part of general social policy. Thus, stemming the growth of slums in urban areas especially in the major cities was highlighted. Policy was also aimed at forestalling the growth in medium-sized towns of situations of imbalance. Therefore, reservation of adequate land for public purposes - roads, markets, schools, and drainage, was to be pursued to enable these towns avoid the worst aspect of the difficulties of the large cities.

Insufficiency of housing in urban areas has posed great threat to the stability of family life which in turn could undermine the whole social fabric. Thus, government intended to encourage a rate of house construction that would preserve the cohesion of

family life in the urban areas. In this regard, government recognized the preservation of the community pattern in the development of urban areas as had been demonstrated in the development of Tema; a city divided up into fairly self-contained communities to develop a community life in which the individual family, especially if it is an immigrant family, could find a satisfactory social position.

The economy was, eventually, expected to be able to assure adequate housing for each family in the country as a matter of right. However, until the economy was able to assure the implementation of this right, a more limited housing policy was proposed, aimed at relieving the housing problem at the points where it was most acute. Hence, housing in the urban areas to meet the expected increase in the population in these areas was recognized as most pressing.

Regarding rural housing, central government assistance during the plan period was to consist mostly of further extension of the Roof Loans Scheme and of the development of a building materials industry which should be able to assure the rural communities access to building materials at reasonable prices.

The upsurge of a number of satellite towns and villages around the larger cities and the increased overcrowding of slum areas within these cities was observed to have resulted from the rapid influx of rural people into urban areas since the end of the second world war. Hitherto, municipal policy had not adopted a realistic approach to the reception of these immigrant workers who constituted a very important element in the total labour supply. Consequently, on one hand, these immigrants have provided themselves with what housing they could in city centers in defiance of building and other regulations of the municipal authorities; and on the other hand, the satellite towns and villages which they have created have grown up without adequate planning or

sanitation.

Policy was therefore, aimed at development of sub-urban towns and villages as initial reception centers for immigrant labour in the larger cities. Based on economic considerations, government was to prescribe minimum standards of housing and provide a kind of squatter upgrading scheme for these slums.

Tema township development was to be ambitiously pursued by building more new communities. This was to be achieved through government and private sector collaboration; government investment was to consist of provision of basic facilities, while private individuals or corporate bodies construct the actual housing compatible with the normal building regulations of the municipal authority.

Recognition was given to the role of finance in any housing policy. Government intended to facilitate private participation by making a number of financial arrangements conducive to increased private savings and investment in housing. Hence, policy aimed at stimulating the flow of loanable funds from financial institutions into the housing market. The most effective means available to any government in drawing out loanable funds from such institutions is either direct or through a financial intermediary. The existing housing agencies, Tema Development Corporation (TDC), GHC (now SHC), and the FGBS were to be put in the position of being able to borrow from holders of guarantees. They were to be developed to a status where banks, insurance companies and pension funds would be able to lend to them. In addition, foreign direct investment was identified as one source of flow of funds into the housing market. It was government intention to negotiate with countries that expressed interest in investing in residential construction in Ghana.

To improve housing quality, emphasis was to be laid on provision of water,

drainage systems, electricity and streets. These utilities were believed to be integral to any housing package. The rather high cost of housing was a matter of concern. It was noted that while in most advanced countries a house costed the equivalent of between three to four times the annual income of an individual, in Ghana housing costs amounted to between six to eight times the income of most people.[3] There was to be a rigorous research into cheaper building through improved designing and more efficient methods of construction and into the greater use of local building materials. The regime of the first republic under Kwame Nkrumah could not stay in power to pursue these policies to the full. Thus, there was a break in implementation of this laudable plan.

Apparently for two years after the National Liberation Council took over from the Nkrumah regime in February 1966, 'the management of the Ghanaian economy has been done without the guidance of a formal development plan.'[4] This meant that the seven-year plan was suspended. At a point the government felt that as the country was moving from a period of stabilization into one of development there was need for a national planning framework. This was to lay down policies for an efficient and disciplined channelling of the available resources to ensure accelerated growth. Therefore, the two-year development plan was instituted in mid 1968 to cover up to mid 1970.

Housing policy as spelt out in this document was to extend the benefits of good housing to as large a section of the people as possible both in rural and urban areas. The government recognized that to achieve that would require the mobilization of all

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[3] This has been stated in the Seven-Year National Development Plan of the Republic of Ghana for 1963/4.

[4] See 2-year Development Plan (op.cit).

available resources both private and public. Dependence on public investment alone in housing could not solve the problem of housing shortages. Thus, government policy was to encourage private housing through rationalization of the incidence of taxation on house owners; reviewing the operation of controls especially in the urban areas, and eliminating bottlenecks in the construction industry.

Focus of policy was on the provision of assistance to the low income bracket. Nonetheless, some in-kind support was to be extended to middle and upper income groups who desire homeownership as well.

To make a real impact on the housing problem, it was essential that various government agencies responsible for housing be brought together to prepare a consolidated annual program and budget. Additionally, these agencies must arrange to share and strengthen their technical services, provide for large scale site development, sponsor self financing methods such as co-operatives and industrial housing and to secure the flow of savings, banking and insurance funds into housing. The achievement of a more coordinated program to reverse the deteriorating trend in the housing situation demanded that government resuscitate the Housing Division of the Ministry of Works and Housing. Therefore, policy aimed at starting this division with appropriately qualified personnel to ensure the availability of requisite expertise at policy making level. A Housing Advisory Committee was also to be set to provide the necessary guidance on the formulation and implementation of effective housing policies.

The government decided to take steps to reorganize SHC in such a way as to ensure that it operates efficiently. Houses built by the Corporation were to be offered for sale on deferred payment basis. TDC was to be similarly treated as SHC in terms of this policy.

The Roof Loans Scheme which was popular became characterized with indifference, aparthy and mismanagement; its revolving capital ran down to insignificant levels resulting from diversion of funds. Thus, policy intended reviving the scheme and placing it under the control of the Ministry.

Reduction of building cost received high attention in the policy plan. This was to be achieved through research into planning layout of housing estates to provide for services and amenities at minimum cost; designing of standard house types in order to simplify construction and to permit the use of mass production of selected housing components and revising existing building regulations to facilitate incorporation of new methods. Research was also to be conducted into the import content of house construction so as to reduce foreign exchange costs of building materials.

It was observed that for the few rental units, the rents currently in use were neither related to community rents nor the tenant's ability to pay. The policy was, hence, to charge economic rent. But subject to such variations as circumstances may warrant, subsidies were to be given where necessary, and an accounting system put in place to reveal the amount of subsidy. An income ceiling was to be considered for those entitled to renting public-owned housing. A rent review committee was to be appointed to carry out a general review of rents.

Government intention was to provide those who wanted to own their houses with some assistance in the form of making available prepared sites provided with roads, drains, water supply and electricity. These sites would be leased at cost to developers to build their own designs subject to normal approvals of the local and town planning authorities.

The Second Republic replaced the military regime of the NLC in 1969. When in

office, Busia's government saw the need for a development plan. The aim was to achieve a short term economic stabilization. In this plan, housing policy was directed at a mixture of public and private efforts to raise the level of investment in housing. To achieve this the following strategies were to be adopted:-

(i) SHC and TDC were to be made community based. They were required to attain financial self reliance after initial help from government over a limited period;

(ii) rents were to be raised gradually to economic levels so that previous investments could be recouped and reinvested in new housing projects;

(iii) houseownership was to be generally encouraged in order to stimulate savings for housing investments;

(iv) provision of more housing capital through building societies, housing co-operatives, banks insurance companies, private financiers and housing financing consortia. In this connection FCBS was to be reorganized and SHC to be encouraged to supply mortgages to its customers;

(v) efforts were to be made to amortize the capital invested in existing government housing for civil servants and other public officers by reconsidering the existing rents and selling these houses to raise capital for housing and simultaneously reduce outlay in the maintenance of bungalows and flats.

The underlying principle of policy was the construction of more houses with still limited available funds. Further policy strategies included:-

(a) the achievement of a marked shift from the production of luxurious houses towards the construction of low and medium cost houses;

b) assisting municipal, urban and local authorities to construct low cost housing units; and in conjunction with TDC to develop a workers housing program on a 'rent - purchase' basis;

(c) further encouragement of research into production of low cost housing utilizing domestic materials;

(d) reactivation and modification of the Roof Loans Scheme in the light of experience gained from inspection tours on Roof Loans projects in the rural areas throughout the country;

(e) provision of technical aid under the Roof Loans Scheme to help people in building comfortable houses in properly planned communities instead of unplanned developments which have hitherto characterized the rural areas;

(f) budgetary allocation to the Ministry of Rural Development to encourage new village settlement and townships.

Another development plan was drawn up in 1975 after the overthrow of the Second Republic by a military coup in 1972. Housing policy as outlined in this plan entailed the drive to provide more houses. The Goverment realised that inspite of rent controls, rents, especially urban rents, were rising and becoming major items in the cost push pressures on the general cost of living. A special loan scheme was expected to go into effect for Civil Servants and similarly for those areas of public sector not already covered.

In addition there was to be reactivation of the activities of the special institutions in the area of granting housing loans. The activities of FGBS and the Bank for Housing and Construction (BHC) as well as the general banking system were to be intensified in

order to play a significant role in the task of providing adequate accommodation at reasonable cost.

It was realized by government that the quest for cheap accommodation for the people could not find a satisfactory answer in mere availability of loans. The cost of building material or construction, in the end was the major determinant of housing cost. Policy was therefore to vigorously promote the increased use of wood, particularly from secondary timber whilst efforts to develop widely scattered network of factories for the production of bricks and tiles received attention.

Despite the initial expectations from these numerous attempts at remedying the housing situation all have proved defective and failed to provide the much needed national housing. The situation seems to have gone from bad to worse. Thus, under the regime of the Provisional National Defence Council a re-examination was made of all the existing programs in the context of the changing national economic and socio-political climate. Some defects in concepts of the earlier programs have been identified.

After thorough analysis the following conclusions have come to light [1]:-

(1) in the past, there has been a lack of co-ordinated national housing programs;

(2) Government has devoted too much of its energy and resources trying to deliver housing through specific projects, rather than facilitate private developers to spearhead the housing effort;

(3) the numerous researches into affordable housing and design have not been translated into practical action mainly due to restrictions imposed by

[1] This is basis of the new housing policy. Details are in Housing Policy and Action Plan an unpublished Ministry of Works and Housing document.

existing building regulations;

(4) rational individual conception of housing have tended to be grandiose given the constraints within which we as a people have to operate;

(5) unrealistic and unattractive rent levels, have failed to motivate investors in the rental sector, especially at the lower levels;

(6) weak planning programs both of land management and infrastructure for housing;

(7) a lack of incentive for house ownership by public workers on account of the cheap in-kind accommodation provided by Government;

(8) last but not the least, a lack of affordable mortgage loans to support house ownership schemes.

These factors in combination have resulted in the dearth of affordable rental units, as well as, relatively few owner occupied homes, all giving rise to the disconcerting and demeaning situation of retirees being turned out into the streets at a time when they are most vulnerable.

This time around, the Ministry's policy is to ensure that good housing accommodation at reasonable cost is provided for the greater majority of Ghanaians. The main objectives of the policy therefore are:-

(i) a shift of emphasis by government from construction of houses to provision of infrastructure, serviced sites and finance in support of housing development with specific intervention to take care of critically low income groups;

(ii) preservation and protection of existing housing stocks, both in the urban and rural areas from deterioration and collapse;

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(ii) preservation and protection of existing housing stocks, both in the urban and rural areas from deterioration and collapse;

(iii) provision of effective co-ordination and support for housing sector programs and action plans;

(iv) restructuring and strengthening housing sector institutions such as SHC, TDC, and AESC to enhance their programmes and viability;

(v) providing incentives and removing bottlenecks that impede the private sector's housing delivery efforts.

The intention behind the policy objectives is to develop a shelter strategy that is sustainable and self supporting.

In conclusion, it could be said that housing policy did not seem to have changed remarkably from one development plan to the other and from other policy documents. One noticeable feature is rental housing received no encouraging attention. Housing policy throughout has tended to emphasize identical ingredients mainly:-

(1) a shift of government from direct production of housing to facilitator;

(2) provision of finance for real estate development and for mortgage;

(3) researching into appropriate housing materials and house types in order to reduce housing cost and make it affordable;

(4) a move to making rents reflect actual prevailing macroeconomic conditions.

The subsequent section can therefore be seen largely as a response to housing policy as reviewed in this section.

2.1 The Housing Market Overview

The housing market in Ghana, like in most developing countries, is imperfect. It has special characteristics with wide divergencies between private and social costs of production and limits on the flow of resources to the entire housing sector, and to low

income households in particular.

Scarcity of well located land, the high capital cost of land servicing and the durability of housing make for a relatively inelastic housing supply; increases in urban population, family formation and income levels lead to large shifts in demand which frequently outstrip the supply. The consequence is a market rationing process in which the limited housing stock is allocated to the highest bidder.

All households, except those in the highest income categories are forced to accept housing which does not meet their expectations resulting in increased crowding. Middle-income families occupy housing designed for low-income families, and the latter may not be able to afford 'formal' housing at all.

National data for housing structural types are not available, However, an inference about them could be made from data on households by housing type. During 1987-88, only 14 per cent of Ghana's households lived in single-family homes and 30% lived in self-contained flats. About 55% lived in single rooms which were not self-contained, and 25% lived in compound housing.[6]

Current housing statistics for Ghana need cautious interpretation. However, they tend to indicate serious inadequacy of the housing stock, in quality as well as in quantity.

The Ghanaian housing situation is that of a national development crisis with a current annual 'need' of 70,000 and accumulated delivery deficit of 250,000 needed to reduce urban average number of persons per room from 12.81 to 7. An average annual

[6] These are based on Ghana Living Standard Survey 1987-88 conducted by the Ghana Statistical Service, Accra.

delivery of 133,000 units were estimated[7] (See Table 2.1) to have been needed to provide adequate housing within the next 20 years as against the current annual delivery of 28,000 which represents a performance rate of 21% of planned capacity.

Consequently, the housing market in Ghana is one in protracted disequilibrium where supply lags seriously behind demand.

2.1.1 Government Intervention

Governments intervene in most markets in order to regulate the market forces with a view to correcting any inefficiencies or failures. Public housing projects and housing policy may be seen as a response to market failure.

Market failures (monopoly, technological externalities, uncertainty and inequity) are traditional reasons in welfare economics for government intervention. Equity is commonly thought in terms of income distribution (housing benefits, public housing for low income groups). However, the position of many economists has been that governments are wasteful and inefficient. Market failure is not a sufficient condition for public sector intervention for 'it may be the case that government intervention is inefficient as well as introducing its own distortions', (Boadway, 1979, p.30).

[7] These estimations are documented in National Housing Policy and Action Plan (1987-90) based on a study by Department of Planning of University of Science and Technology, Kumasi in 1986.

Table 2.1 Population trends, housing needs, delivery and delivery deficits towards adequate housing from 1985-2005.

Figures '000s'

	1985	1990	1995	2000	2005
A. Urban Projection:					
1. Population (Projected)	4030	4840	5813	6981	8384
2. Annual growth % (constant	4.02	4.02	4.02	4.02	4.02
3. Annual increase	101	162	195	235	280
4. Annual displacement occupying 1% of housing stock to be replaced	43	48	58	70	84
5. Population to be provided with new houses annually	144	210	253	304	364
6. *Annual requirement at 7 per household	21	30	36	43	52
B. Rural Projection:					
7. Population	8970	10118	11413	12874	14522
8. Annual growth % (constant)	3.56	2.56	2.56	2.56	2.56
9. Annual increase	166	230	292	330	372
10 Annual Displacement (20% of housing stock	179	202	228	257	290
11. Annual increment (new houses)	345	432	520	587	662
12. *Annual requirement at 7 per household	49	62	74	84	95
C. National annual deliveries (6+12) to be replaced)	70	92	110	127	147

D. *De-crowding: (from current delivery deficit)

13. Current urban decrowding (12.81 to 7/household average)	=	260 units
14. Current rural decrowding (8.49 to 7/household average)	=	222 units
15. Total		482 units
16. Annual rate for completion within 20 years	=	24.1
17. Annual rate for normal deliveries within 20 years	=	109.2
18. Overall annual delivery for providing adequate housing within the next 20 years		133.3
19. Current average annual delivery		28
20. Current delivery performance		21%

Source Ministry of Works and Housing; National Housing Policy and Action Plan (1987-90), Unpublished.

Nevertheless, market forces solely do not help in the determination of output and allocation of all goods—public goods for example because of their specific nature of joint consumption, non-excludability and, hence, the propensity of consumers to free ride. At various stages in Ghana's post independence era, governments tried as much as possible to intervene in the housing market. This took the form of government providing houses for top civil servants as well as junior workers. Compensation of people through resettlements has also taken place at most places, for example the resettlement of people living along the Volta River. Public Servants at points in time have also been advanced loans for home purchase or home building.

Public sector involvement in the Ghanaian housing market derives from participation in the whole building process through such agencies as:

(a) The State Housing Corporation

(b) Tema Development Corporation

(c) Redco

(d) Prefab Concrete Products Ltd.

(e) Other agencies

(See Appendix one).

Many housing projects were initiated with the involvement of these public agencies during the past decades and their expected combined annual output was to be in the order of 1,000 units. However, delivery rate has never reached 100 units leaving the vast majority at various construction stages and this has created serious capital lock-up. Accordingly, further capital injection would be required and this coupled with prevailing inflationary trends would result in harsher recovery measures where capital used has to be repaid.

Government therefore has not been very successful in solving the housing problem. Physical manifestations of the problem still exist: shortage of supply leading to overcrowding, long waiting times to acquire houses, lack of amenities and highly priced houses in relation to income.

Most of the housing parastatals have not lived up to expectation as regards the housing delivery. Problems ranging from lack of funds from government, managerial inefficiency, unnecessary political interference in internal management and inability to recover cost because of low rents on rental properties have beset these institutions rendering them inactive few years after their establishment.

2.1.2 Rent Control

The use of rent controls to prevent private individuals from capturing socially caused gains and to mitigate the imperfections of housing markets has a long and unsuccessful history in developed as well as developing countries. Rent controls have been effective only for limited periods of social cohesion, as during war-time, and when applied in combination with strict controls on other incomes and prices (Grimes, 1976).

In Ghana, the rent control division was established in 1952 under the control ordinance No.2/1952, it now functions under provisions of the Rent Act, 1963 (Act 220) and other related enactments including Rent Control Law, 1986 (PNDCL 138). The division is tasked with ensuring that there are no unlawful increase in rents; that tenants are not unlawfully ejected and that cordial relationship exists between landlords and tenants among other things.

The existence of rent control in Ghana means that the price per unit of housing varies enormously between tenures, as well as with housing services available in each tenure group. A discounted cash flow model, incorporating controlled rents, tax on

rents, maintenance, depreciation, land and construction costs, reveals a large negative net present value as far as the landlord is concerned and a negative internal rate of return (Malpezzi, Tipple and Willis, 1990).

Some results of controlled rents are that the poor for whom it is purposed are driven out of much of the controlled housing. The controls force legal returns on housing below market levels leading to disinvestment and the deterioration of housing through lack of maintenance.

2.1.3 Housing Finance

Methods of organizing institutions to finance housing and the repayment of mortgage loans are extremely important, both to ensure that funds are available so that houses can be built and to broaden the access of various income groups to home ownership.

In the words of Freed (1976), 'each succeeding year, as the world's population grows and urban migration continues, the shortage of adequate housing becomes greater. It is a shortage created not from a lack of building materials, labour or know-how, but from deficiency of financing'.

Thus, to cope with this deficiency, worldwide consideration is being given to changes in the necessary institutions and home financing methods in order to meet the needs of borrowers and lenders, and enable more housing to be affordable.

Central to the problems faced by housing finance system in Ghana is the need for a stable macroeconomic environment. The past one and half decade has witnessed extreme instability in incomes and prices. In fact, Ghana has one of the most distorted price systems in the world (Agarwala, 1983).

The main institutions are described in detail in appendix one.

2.2 Current Developments

The housing problem is being given some amount of attention in recent years. Possible efforts are being made fervently in order to make housing affordable to both low and middle income earners. In pursuance of these affordability objectives, and also cognisant of the fact that financial intermediation is crucial in the housing market, the Government of Ghana under the financial sector reform is taking positive strides to revive mortgage lending in respect of housing. At the supply side, encouragement is being given private estate developers through tax exemptions on inputs to house production. The early 10% import duty and 7.5% sales tax on building materials have been waived since 1985. In addition, a five year tax holiday with two year loss carryover has been granted to firms engaged in building construction and in the manufacture of building materials.

2.2.1 The Home Finance Company

An effective housing finance mechanism offers real-estate developers the opportunity to obtain short term loans at reasonable interest rates and prospective owners to have access to long term loans at reasonable rates.

The availability of long term mortgage finance has been one of the major problems encountered in the Ghanaian housing market. To fill in this gap and make available long term funds to 'financial institutions' in extending mortgage loans to the people of Ghana on a sustainable basis, the Home Finance Company (HFC) was established. It is a joint venture of the Ghana government, SSNIT and the Merchant Bank. The Company started operation in July 1991 on a pilot basis.

A prospective house owner is required to pay a deposit of 20% of the value of the house of his choice through his bankers or insurance companies who must be

accredited agencies of the Home Finance Company. Full payment is then made on his behalf and the house becomes his property.

The specific terms of the HFC Pilot Mortgage scheme are as follows:

(i) interest rate; 3.5 per cent per annum,

(ii) repayment period; 20 years (maximum),

(iii) monthly instalment; 25 per cent of borrower's income at any point in time,

(iv) indexation; balance of principal is adjusted monthly according to average changes in consumer price index (CPI) over the preceeding three-month period,

(v) repayments are allowed without penalty.

The HFC mobilizes funds by selling indexed bonds which are also indexed monthly to the consumer price index.

Undoubtedly, the success of HFC will emmensely depend on the general macroeconomic performance. Low rates of inflation and rising real wages will go a long way in favour of the sustainability of the scheme.

The scheme is young and not so much can be said about it now. However, the requirements for qualification under the scheme as currently prevailing do not fully favour the low income group.

2.2.2 Real Estate Development

With the increasing awareness of using housing as an investment especially in the urban areas, many investors are beginning to diversify their investment portfolios in favour of housing.

Companies are springing up in real estate development. Recognizing the need for an organized body to co-ordinate the activities of these new up-coming firms, the

Real Estate Development Association (GREDA) was formed in 1988. This ıtion encompasses, the Social Security and National Insurance Trust (SSNIT), o Estates Ltd and the National Trust Holding Corporation (NTHC) as the main or r members and other companies, for instance, Regi-Gray Manuel Ltd as latter ers. These companies have so far produced close on 800 housing units for ıt purchase or by purchase through the Home Finance Company mortgage scheme. The future plans of GREDA include organizing 'sites and services' scheme for its ers as part of National Shelter Strategy. Infrastructure, such as access roads, water ctricity are to be provided, with well developed land, to members.

Housing in Ghana has a bright future with the inception of GREDA. Albeit, it he necessary support in order to fulfil the desires of the home seekers.

CHAPTER THREE

HOUSING LITERATURE REVIEW

In this chapter, the existing literature is surveyed with a view to gaining an insight into what others have found as being the main determinants of housing demand and for that matter, investment. By so doing the knowledge gained will help in identifying an appropriate model to adopt for the purpose of estimating the demand parameters. Comparison will also be made with some findings on the demand elasticities as revealed by the literature.

Housing markets in developed countries especially US and UK, have been studied extensively.[8] There is abundant literature on income and/or price elasticities of demand for housing.

Three main reasons could explain this proliferation in size of literature:-

(i) the many practical difficulties in the specification of econometric housing models (such as the correct measurement of prices, quantities, incomes, and choice of functional form) have led to a number of alternative approaches by different investigators;

[8] For example Blank et al (1953), Reid (1962), Gebler et al (1956).

(ii) housing markets are local and diverse. What is true in one city, even within a country, is not necessarily true in another, so it has been natural to extend demand analyses to a wide variety of places;

(iii) governments actively intervene in housing markets and efficient intervention requires detailed knowledge of housing market parameters.

Though, in developing countries, there is a felt need for careful modeling of housing demand only a small number of studies have been done.[9] These studies, however, are only rarely linked to policy applications. Research has tended to focus on a small number of countries where data are available - often better off developing countries. In cases where even data exist, analysis has often been hampered by limitations in sample design, definitional problems, and poor quality data.

The modest amount of research that has been done suggested important similarities in patterns of housing demand both among developing countries and developed countries (Ingram, Jimenez and Keare, 1984).

Summarizing information on some housing demand studies in developing countries, Mayo et al (1985) pointed to the following results:-

(1) most income elasticities are between 0.5 and 1, indicating generally inelastic demand;

(2) income elasticities for renters are generally below those of owners; the median renter elasticity is about 0.45, with two-thirds of the estimates falling between 0.4 and 0.8. The median owner income elasticity is about 0.65. While several of owner estimates are above 1.0, none of the renter

[9] For example, Lluch et al (1977) Follain et al (1980).

estimates is above 0.8;

(3) price elasticities are small, with medians for owners and renters equal to 0.2 and - 0.3, respectively; price elasticities are below income elasticities in absolute value.

Despite the regularities noted above, there is still quite a bit of variation in parameter estimates from place to place and, depending on model specification, or underlying behaviour.

The earlier housing studies dwelt on cycles[10] in residential construction in the post-war period particularly for the United States of America (U.S). They seek to identify cycles in housing starts. In one such study Guttentag (1961) showed that short cycles differ from long cycles in certain basic causes. Further, he stated that no significant relationships exist between the short cycles and such factors as house prices, income and employment, marriages, household formation etc, which it is reasonable to assume are related to housing demand. Fluctuations in the demand for housing arising primarily out of changing rates of population growth are important in most standard explanations of long cycles in residential construction.

Maisel (1963) also indicated that housing production which earns the dubious distinction of ranking among the most cyclically volatile industries is important in the economy because of its size.

The demand for housing is determined by long-run factors, principally population

[10] Cycles reflect fluctuations (downturns and upturns) in an economic variable over time around the trend as a result of sluggish adjustment from other related factors.
Short and long cycles refer to short and long-run fluctuations.

or the number of households. In the long run the number of dwelling units is closely correlated with population and the way in which it is divided into family units. This has led to the suggestion by some economists that the number of households, rather than population, is the relevant long-run demographic determinant of the demand for residential construction (Evans, 1975). If a household were defined as a unit with seperate dwelling accommodations, then the number of households may share common living quarters. This is more likely to happen during times of adverse economic conditions; in particular, young married couples may live with their parents longer before finding their own living quarters. Because of this possibility, the number of households is not an unequivocally better indicator of the demand for housing than is population. Another demographic variable, the family formation (marriage) rate, is even less satisfactory, for it is correlated with short-term economic indicators (for example, it decreases when unemployment rises), and thus includes elements of both short-run cyclical fluctuations and long-run trend.

Other variables have often been suggested as determinants of the long-run demand for housing although they more properly belong in a short-run function. The most important of these are income, credit conditions, and the price of housing. Income is sometimes considered to be an important long-run determiant of housing in much the same way as population. Gebler and Maisel (1963 p.487) pointed out that per capita value of residential capital and demand for new construction in constant prices fluctuated within narrow margins. This did not imply that the percentage of income spent on housing was constant; the actual amount per capita changed very little when price changes were taken into account.

In recent years, debate over rent- income relationship resurfaced in estimates of

income elasticity of demand for housing implied to be less than one by Schwabe[11]. No consensus has emerged from this work. Comparisons of the income elasticity of housing demand has usually been put into three categories:

(a) by tenure, that is, renters and owners,

(b) by groups of population variously classified by age or race,

(c) by type of income measured.

Consistently, investigators find higher income elasticities with respect to housing demand for home owners than for renters. According to Malone (1966) buyers of used homes show higher elasticities than those buying new homes. Also Roistacher's (1980) analysis of data for moves confirmed higher elasticity for owners except among lower income groups, where renters have the higher demand elasticities. These findings as suggested by Mittelbach (1974) have policy inference. Thus, the fact that owners have a higher income elasticity than renters may explain why people in developing countries tend to build their own 'shack' rather than pay for standard rented accommodation.

Daniel Z.S. (1989) observed that measuring demand in the state regulated market of fixed rent housing under the conditions of chronic shortage cannot take place in a manner usual in a buyer's market[12]. He further intimated that observation of actual

[11] The original Schwabe's work was done in 1868 but the result has been cited in George J. Stigler's article "The Early History of Empirical Studies of Consumer Behaviour" - Journal of Political Economy; LXII (April 1954), p.95-113.

[12] According to the usual characterization, on a buyer's market sellers can consequently experience difficulties in selling their output at anticipated prices. Demand is the 'short-side' of the market, i.e, the effective constraint of transactions.

housing consumption and of moves is not enough to estimate notional demand[13]. In addition it is not known what the household's attitude would be in case of higher rents. Chronic shortage, he noted, exert an influence on demand formation and consumer behaviour of households. In addition, chronic shortage conditions have not only distorted supply and thereby also actual housing distribution in relation to demand, but also permanent seller's market[14] conditions exert an influence on demand formation and on the consumer behaviour of households. By observing that the universal effects well known in the theory of housing demand are asserted significantly in both buyer's and seller's market his conjecture has been confirmed. The standard explanatory variables behave in an identical manner in both markets; housing demand increases as a function of income and size of household, and decreases as a function of rents.

Based on data analyses of urban household expenditure on housing in Indonesia, Daniel Shefer (1990) observed that expenditure on housing increased at a faster rate than income (except in the very low income groups). The proportion of income allocated by the average household to housing ranged from less than 15% to close to 25% (the latter being found in the upper income group). Estimates of marginal propensities to consume (MPC) housing services, revealed that it varied between 0.15 and 0.40 depending upon urban size and location. Similarly the income elasticities vary from 0.80 to 1.20

13 Demand or supply functions are notional, when they are constructed under the assumption that the agents can purchase and sell as much as they want at the proposed price-hence the absence of any quantity signal.

14 In contrast on a seller's market the buyers experience difficulties in buying the demanded goods at the anticipated prices. Supply is the 'short-side' of the market i.e, the effective constraint of transactions.

depending upon urban size and location (in Jakarta, for example, the estimated income elasticity was found to be 1.24). The revelation that a higher fraction of household income was spent on housing by the high income household group than by the low income group was contrary to the findings reported by Malpezzi et al (1985) and Mayo and Gross (1987).

Customarily, demographic variables are included in most macro models. This was first done by using per capita or family data[15]. Standardized number of households was introduced as a variable. This variable shows the number of households for each year by applying the age-specific headship rates[16] from the base year to the actual population distribution (numbers per age group). The series can be interpreted as the number of households there would have been if the headship rate had remained at the same level given changes in the level and age structure of the population.

The standardized number of households can then be determined for each year and used in the analysis as the demographic factor. Hickman (1974) and Ermisch (1982) used this variable for the U.S. and U.K. with good results.

Draper (1983) noted that excluding a demographic variable from the model brings the growth in housing consumption into relation with economic growth only and as a result makes the elasticity very high. Some models estimate on the basis of figures per head of population, yielding results in between those obtained with models lacking a demographic variable and those using the standardized number of households as

[15] See, for example; Muth 1960; Lee 1964.

[16] The age-specific headship rate is equal to the number of household heads in a given age group divided by the total number of people in that age-group.

independent variable (Lee 1964, Whitehead 1971, Arcelus and Meltzer 1973).

Using a 1986 World Bank sponsored survey data on Kumasi, Willis and Tipple (1987) employed discriminant analysis to investigate tenure choice and demand for housing services. They hypothesized the demand for a particular tenure category, with a specific housing service level (eg exclusive or non-exclusive use of facilities) in the following linear from:

$q_{th_i} = a_0 + a_1 P + a_2 P_i^s + a_3 Y_i + a_4 I' + a_5 d_i$ where

q_{th_i} = demand for tenure (t) and housing service level (h) by household (i),

P_i = price for tenure (t) and housing service (h) paid by household (i),

P_i^s = price of substitute tenure and housing service available to (i),

Y_i = vector of household economic variables, eg income, number of workers in the family,

I' = vector of legal, political, and ethnic qualifications, privileges and access to land entitlement,

d_i = vector of demographic variables affecting tenure and housing service choice, eg age of head of household, male or female headed household, number of children, length of residence.

They found that demand for housing rises with income; the income elasticity of demand for roomers[17] in Kumasi was 0.28. This value is low compared to others for developing countries reported in Malpezzi and Mayo (1985). It has also been observed that even though rising income across social groups within a society is associated with

[17] Roomers are households who occupy rooms singly, or occasionally in pairs (known as a hall and chamber), usually in a compound house sharing facilities with other households.

a fall in the rent to income ratio across countries, the proportion of income spent on housing rises with increasing income. The distribution of household income is often quite different from that of per capita income (Datta and Meerman, 1980), especially for very small and very large households but, in both cases, higher incomes permit greater choice in housing tenure and access to better housing services.

Tenure choice was found to be significantly influenced by variables which quite well correspond to those from Gilbert (1983) and 1987). These included:

(i) income (ie consumption as a proxy for income) and income (consumption) per capita, which relate to economic factors;

(ii) age of head of household, length of residence in Kumasi, and length of residence in the house, which relate to adoption of urban values by being in the city for a long period;

(iii) year of construction of house, and dummy variables for whether a household had lived in a government-built house in excess of ten years (as a proxy for those likely to have been able to buy a government-built house), and for the home region of the head of household, which relate to access to land ownership; and

(iv) number of rooms in the house, and a dummy variable for condition of house structure which are unrelated in Gilbert's list.

Hans van Fulpen (1988) analyses the housing market in the Netherlands. His study employed macro and micro models.

The macro-analysis was based on data on the housing situation in the Netherlands in the period 1960-1983. A stock adjustment model was implicit in this macro-analysis. Housing needs survey data for 1981 was utilized for the micro-analysis. Therefore, the

macro-analysis was time series based whilst the micro was strictly cross-sectional.

For the macro-analysis and for three variables distinguished, the following model was utilized:

HH = HH (HHS, PC, PHI/PPC)

HS = HS (HHS, PC, PHI/PPC)

HE = HE (HHS, PC, PHI/PPC)

where

HH = number of households

HS = housing stock

HE = total housing expenditures

HHS = standardized number of households

PC = private consumption

PPC = price development of private consumption, (or consumer price index) and

PHI = rent trends.

The estimated micro demand function has the form:

NHE = NHE (Y, SIZE, PRICE, AGE)

where

NHE = net housing expenditure

Y = a measure of income

In the macro analysis, the income elasticity was 0.47 and in the micro analysis the income elasticity for all households (with net expenditure as the dependent variable was 0.54, 0.83 for owner-occupiers and 0.32 for the rental sector).

Concluding from the macro model, the housing stock increases much more rapidly than the number of households in a period of economic growth, a conclusion

supported by the findings of the micro-analysis. The result is a lower number of inhabitants per dwelling. In a period of economic stagnation, by contrast, household formation persists (though at a lower level), but the demand for housing decreases, resulting in a higher average number of households per dwelling.

Further, it is concluded that economic growth has a stronger impact on the demand for housing than on household formation (long-term elasticities of 0.26 and 0.20 respectively). Household formation is more influenced by demographic factors and socio-cultural trends (long term elasticities with respect to the standardized number of households of 1.07 and 0.93 respectively).

Muth (1960) provided what is now regarded as the standard demand for housing given as

$$HD = a_0 + a_1 P_H + a_2 Y_p + a_3 i_H$$

where

HD = housing demand

P_H = price of housing

Y_p = a measure of permanent income

i_H = bond rate (could be a mortgage interest rate)

To deal with the dynamics in order to construct some sort of minimum empirical test, the above expression can be combined with other expressions. It can also use other variables and can be estimated as part of a structure.

Turning more specifically to macroeconomic approaches, housing demand model may be constructed as if it were a consumption - expenditure problem. The first consideration is that by breaking out a particular component of consumption (by disaggregating), relative prices are necessarily introduced into the framework. In Boughton's (1976) model, food, other non-durables, and durable goods were

distinguished and the following equation was estimated

$$C^{*}_{k}(t) = Bo + B_1 Y_p(t) + B_2 (P_k/P)(t) + B_3 L(t)$$

for k = 1, ..., 3 where

$Y_p(t)$ = permanent income

L(t) = measure of liquid assets (perhaps a wealth proxy or even supply of funds proxy)

k = disaggregation into 'non-durables', 'durables' and 'housing expenditures'.

$C^{*}_{k}(t)$ = desired housing consumption expenditures.

Putting in a lag structure for Y_p would be equivalent to postulating a difference between $C^{*}_{k}(t)$ and $C_k(t)$ i.e between desired and actual housing consumption expenditures. The hypothesis, then, is that housing investment is a consumption expenditure that substitutes for (or complements) other expenditures (P_k/P), that may have a different lag pattern (for Y_p) due to its durability and postponability, and that may well strengthen the influence of liquid assets (L) on consumption, on account of 'credit rationing' in housing markets. Seemingly, there do not exist consumption or investment studies with just this rationale and it is a potentially rewarding disaggregation, depending on the strength of substitution effects (etc) and on the availability of suitable data.

The fore-going is not really adequate in that the investment aspect of housing is not accounted for and this could be accommodated in a consumption investment model, but in this case to produce a neoclassical new-housing demand function.

First, assume a per capita demand for housing services of Ch where C is total consumption services. This was developed by Kalchbrenner (1972) and explained by Ott D, Ott A and Yoo J (1975).

To convert from the flow to the stock demand, we note for a perpetual stream of rents

$P_H/i = P_H$ where P_H is the average price of a new house and Ph is the rent per unit. Deducting property (and income) taxes (in the form of t, a tax rate) from P_H, we have

$$P_h = P_H (1 - t) i$$

With this substitution we may directly model the desired stock of housing as

$$K^*_H/N = (P_H (1 - t)i/P_c, C/N)$$

which taken in a Cobb - Douglas form yields

$$K^*_H = N [P_H (1 - t)i/P_c]'1 [C/N]'2$$

With $r_1 < 0$; $r_2 > 0$

So,

$$\ln K^*_H = (1 - r_2) \ln N + r_1 \ln P_H + r_1 \ln (1 - t) + r_1 \ln i - r_1 \ln Pc + r_2 \ln c. \quad \text{——— (3.1)}^{18}$$

Equation (3.1) makes it clear that the desired stock increases when t, P_C or C rises, and falls when the rate of interest i or P_H rises (since r_1 is negative). A change in the population N alone has two effects on the desired stock of housing; it reduces per capita consumption C/N and, thus, tends to reduce the desired stock of housing and at the same time, for any C/N, there is an increase in the demand for housing stemming from the premultiplicative N. An equal percentage change in C and N, keeping per capita consumption unchanged, increases the demand for the stock of housing due to 'pure'

18 In equation (3.1) K^*_H is unobservable. But, using an appropriate stock-adjustment mechanism we can have an equation in measurable variables.

population effect by the percentage amount

$$d\ln K^{*}_{H} = (1 - \tau_2)\, dN + \tau_2\, d\ln C \qquad \text{(3.2)}$$

The elasticity of K with respect to N, with per capita consumption unchanged, is thus unity.

As a first step, the demand for net investment in housing and housing construction expenditures can be approached in the same manner as business fixed investment. That is, current additions to the housing stock (net housing investment) are some proportion of the value of projects initiated in previous periods when the optimum stock of housing changes:

$$I_{Ht} - \delta_H K_{Ht-1} = Ho\,(K^{*}_{Ht} - K^{*}_{Ht-1}) + H_1\,(K^{*}_{Ht-1} - K^{*}_{Ht-2}) + \ldots$$

OR

$$I_{Ht} = \sum_{i=o}^{n} H_i\, K^{*}_{t-i} + \delta_H\, K_{Ht-1} \qquad \text{(3.3)}$$

where the H's represent the proportion of the value of housing starts initiated in each previous period which come to fruition in period t as net investment and where $\delta_H K_{Ht-1}$ represents replacement investment.

In conclusion, a theory of housing construction outlays can be constructed by combining the consumption function - which explains the demand for housing services - with the neoclassical investment approach - which translates the demand for the services of housing capital into a theory of net investment. Thus, housing demand and housing investment are interrelated. On account of lags and friction in the housing market, an adjustment in any year cannot be the total difference between the total stock and the desired stock. Total demand for housing is thus directed towards the stock, and production (investment) is just part of the demand that could not be met out of the stock.

From this brief review, the equation (3.1) will be adopted for the study (with slight moditification).

CHAPTER FOUR

THE ANALYTICS OF HOUSING DEMAND

Housing services are those offered by a durable good. Therefore, this chapter presents an introductory theory of demand for durable goods. This aims at further elucidating the theoretical basis of the model adopted for the study. The model is restated, estimated and results are tabulated.

4.0 Introductory Theory of Demand for Durable Goods

The purchase and use of durable or semi-durable goods is essentially dynamic. One purchases, because of their durability, not only current utility from the use of the good, but utilities far into the future. The financing of these goods, also, comes usually from the stock of net wealth which has been built up out of past saving. Finally the existing stock K_t of a particular durable or class of durables follows the dynamic sequence

$$K_t = K_{t-1} + Q_t - D_t \qquad \text{(4.1)}$$

where Q_t represents purchases of the good and D_t is the depreciation of the stock during time period t. Depreciation occurs from wear in use, decay with time and obsolescence, and gradually reduces any unit of the stock to a scrap value. Q_t and D_t are flows during time period t. This point of time can also be treated as the average value of the stock during the period, and centred at the midpoint of the period.

A distinction is often made between the consumer's desire for a stock and his demand for goods on the market. The former is K^*_t, and the latter Q^*_t. It is K^*_t which provides the basic service which the consumer wants. But if $K^*_t \leq K_t$, the consumer exercises no market demand. As K^*_t becomes greater than K_t only then a force for market demand comes into action. Thus, it is only to the extent that $K^*_t \geq K_{t-1}$ that Q^*_t

$> D_t$. Indeed (4.1) can be rewritten as a demand equation in Q^*_t as

$$Q^*_t = K^*_t - K_{t-1} + D_t \qquad \text{(4.2)}$$

In order to explain Q^*_t, it is clear that K^*_t and D_t must first be explained. For explanation of D_t we assume a rate of depreciation Dr applicable to the existing stock. If K_t represents the average stock over the time period, then Dr could be applied to K_t. But if K_t is the stock at the end of the time period, it would be better to apply Dr to K_{t-1}.

Some theorists (eg. Koyck, 1954) assume that only a proportion $o<c<1$ of the gap $K^*_t - K_{t-1}$ in (4.2) is closed during each time period. Relation (4.2) would then become.

$$Q^*_t = c\,(K^*_t - K_{t-1}) + Dr\,\{cK^*_t + (1-c)\,K_{t-1}\}$$

$$= c(1+Dr)\,K^*_t - \{Dr\,(c-1) + c\}\,K_{t-1} \qquad \text{(4.3)}$$

Assuming $c = 1$ with the reservation that the actual value of c must be checked by empirical testing (4.3) becomes

$$Q^*_t = (1 + Dr)\,K^*_t - K_{t-1} \qquad \text{(4.4)}$$

Clearly the previously existing stock has a pronounced negative influence on current demand.

In explaining the demand for stock, the stock is the relevant variable to use in the consumer's utility. The stock, we know, extends forward over the whole future life cycle of the individual. The demand for the stock is therefore based on similar causal forces to those which have been used above to explain the demand for goods in the consumer's budget. In particular, effects of the rate of interest and the effects of delayed causation or habit persistence can be assumed as analysed above. The latter force is now reflected by the use of the explanatory variable K_{t-1}, now with a positive influence.

Interest rate (i) usually has a substantial effect on the demand for durables. There

is an increasing tendency to finance durables with consumer credit. Thus, interest becomes a financial cost, adding to the market price of the durable. The ease or stringency of consumer credit depends not only on the relative size of the down-payment required to the total price (p) of the good and on the term allowed (t) to complete the payment of the debt. Some index of these three components, CRI (i, p, t) needs to be worked out giving appropriate weight to each element in the credit conditions index.

4.1 The Empirical Model

In the previous chapter the model to be used for the study was highlighted. Here a further insight is given to it.

For simplicity of analysis all housing is supposed to be homogeneous. Income from housing is to be assumed taxed, at the margin, at the same rate as all other incomes for each tax-payer. Housing units are then demanded by households for the stream of housing services C_h they yield . The demand for housing services per capita at some point in time may be written as

$$C_h/N = (P_R/P_c, C/N) \qquad \text{——————(4.1.1)}$$

Where

C_h = flow of housing services

N = population size

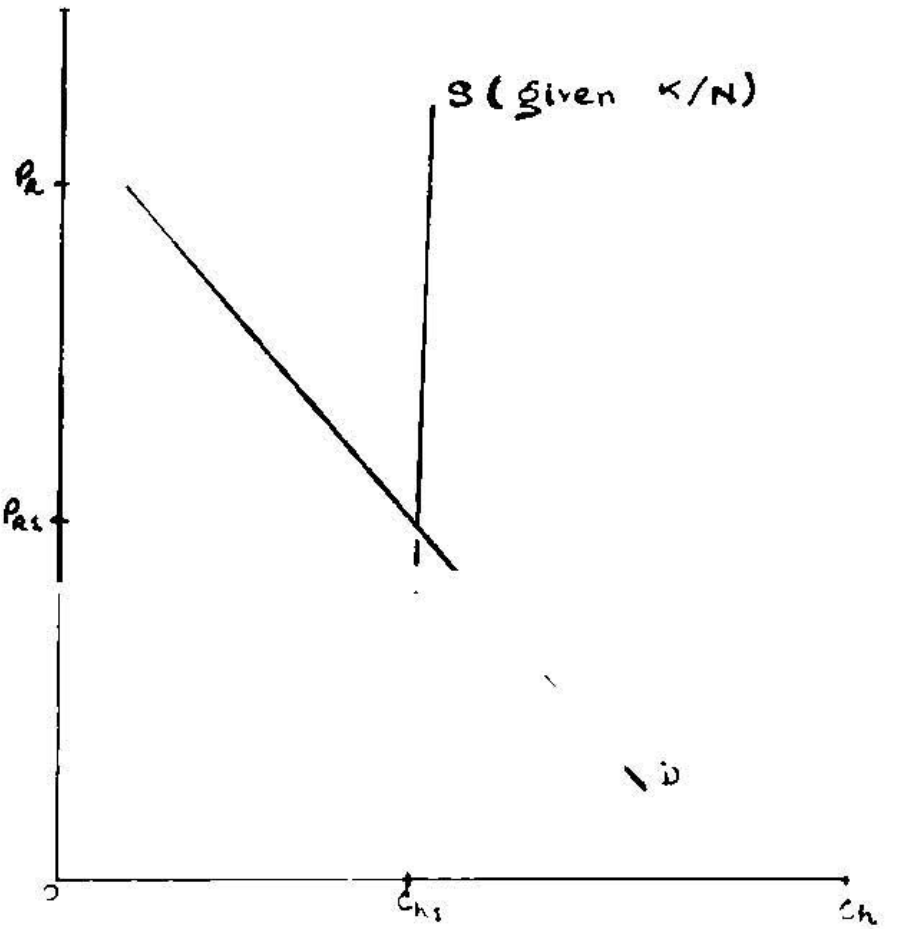
P_R = rent per unit of housing

P_c = implicit deflator or price index for all consumption goods

C = total consumption

The equation says that per capita demand for housing services depends on the relative price of housing versus all consumption goods and total consumption per capita.

Fig. 4.1.1 Demand for Housing Services



Assuming from fig. 4.1.1 that N and Pc are given, then the demand curve D relates desired housing services to the price of such services P_R. The supply of housing services S may be taken as proportional to the stock of housing K_h. Given the stock of housing K_h, the flow of housing services is determined at (say) C_{h1}, and the rental price will then be P_{R1}. An increase in the stock of housing per capita, which increases the supply of housing services per capita, will shift the S curve so as to lower the rental price. An

increase in total consumption per capita shifts the demand curve to the right - the rental price then increases for any given per capita stock of housing. An increase in the consumer goods deflator Pc also shifts the demand curve to the right; the relative price of housing services P_R/P_c is decreased, and the demand increases for any given P_R. Finally, an increase in population increases the total demand for housing services. The demand curve in figure 4.1.1, shifts rightwards, and the rental price rises.

From the discussions so far the following variables have been identified among others to determine the aggregate demand for housing behaviour; that is, relative price, per capita income (proxied by per capita consumption)[19], credit and demographic (population). For this study and following from the previously described procedures the model is

$$K^*_H/N = f(P_H/P_c, C/N, i, t) \qquad \text{——————(4.1.2)}$$

The per capita desired stock (K^*_H/N) approximates the per capita consumption services (C_H/N) offered by a unit of house. P_H/P_c refers to relative price of a house and i and t are respectively the rates of interest and marginal property tax respectively. In the absence of data on any other form of credit, the interest rate (lending rate) is used as the sole credit variable.

To enable us estimate our model a specific functional form must be chosen. Now, let us consider the following cases.

Case 1: Assuming a linear functional form for (4.1.2) we have

[19] The use of per capita consumption as income proxy derives from the permanent income hypothesis which states that consumption is strongly related to unobservable permanent income.

$$K^*_h/N = A + B_1 P_h/P_c + B_2 C/N + B_3 i + B_4 t$$

(4.1.3)

But, K^*_h is not observable so we use the following partial adjustment mechanism:

$(K_h - K_{h-1}) = \alpha(K^*_h - K_{h-1})$ where α is an adjustment coefficient such that $0<\alpha<1$. This is based on the assumption that housing demand does not adjust instantaneously to the desired levels.

Substituting and making the necessary arrangements, the final equation for estimation becomes:

$$K_h/N = a + b_1 P_h/P_c + b_2 C/N + b_3 i + b_4 t + b_5 K_{h-1} + E_t$$

(4.1.4)

where E_t is a term emphasizing the stochastic disturbance having a standard normal distribution. A priori, the signs of the partial derivatives are expected to be b_1, b_3, b_4 $<O$ and b_2, b_5 $>O$

Case 2: For a double-logarithmic form, we have

$$K^*_h/N = A.\ (P_h/P_c)^{A_1}\ .\ (C/N)^{A_2}\ .\ i^{A_3}\ .\ t^{A_4}\ .\ e^{E_t}$$

(4.1.5)

Taking natural logarithm of both sides of (4.1.5) gives

$$\ln K^*_h/N = \ln A + A_1 \ln P_h/P_c + A_2 \ln C/N + A_3 \ln i + A_4 \ln t + E_t$$

(4.1.6)

Using a partial adjustment mechanism similar to the one just discussed but now involving logarithms we have

$$\ln K_h/N = \ln a + a_1 \ln P_h/P_c + a_2 \ln C/N + a_3 \ln i + a_4 \ln t + a_5 \ln K_{h-1}/N + E_t$$

(4.1.7)

with a priori signs of the partial derivatives being a_1, a_3, $a_4 < 0$ and a_2 $a_5 > 0$.

Though (4.1.4) and (4.1.7) are the final equations estimated, more reference is made to (4.1.7). In the double-logarithmic form the a_i's in (4.1.7)[20] are directly the stock-demand elasticities. Apart from this, possible problems of heteroscedasticity from influence of extreme prices and incomes on parameter estimation are reduced when this form is used.

4.2 Data and Sources

The depth of analysis in any empirical work is usually occasioned by the amount and reliability of information available. This study is constrained by the near non-existence of requisite and reliable data. Consequently, the choice, of the rather short period (1970 to 1989) for the econometric analysis is a circumstance beyond control. Data for the preceding years could not be obtained, and subsequent years' similarly proved elusive.

This study utilizes data extracted from local and international publications such as: The Quarterly Digest of Statistics, the United Nations and World Bank publications. Some unpublished information were obtained from the Accra Metropolitan Authority (specifically the marginal property tax rates) as well as other organizations duly cited or yet to be.

Since the available data are secondary, that is, they are not specific for the purpose of this study, at best they could only serve as proxies to the values of the variables they refer to in our model. Thus, we redefine our variables as follows:

[20] One main cr[illegible]que of this functional form, however, is that it doe[illegible]t satisfy the postulates of demand theory except as [illegible]al approximation.

(1) The housing stock K_h is proxied by Gross Residential Capital Formation measured in 1977 constant cedis. Thus capital expenditures on housing are being used instead of actual housing expenditures. However, capital expenditures are good instruments for housing expenditures where data problems arise.

(2) C_t is the total consumption expenditure (ie private plus government) in 1977 constant cedis. This is approximating an income variable in the equation.

(3) N_t is the mid-year population estimate of the respective year.

(4) P_{ht} is the prime building cost index on 1977 base. It is an indicator of the price of a unit house.

(5) P_t is the consumer's price index on 1977 base

(6) t is the marginal property tax rates

(7) i is an interest rate.[21]

4.3 Estimation Procedure (for the period 1970-1989)

The equations specified as the models are estimated using the ordinary least squares (OLS) method.

In each case, the OLS estimation is done using the nominal values of the rate of interest (lending rate). To compare for any significant[22] differences, the 'index' values are also used. All the results are reported in tables 4.1 and 4.2 (See appendix two for values of the variables). The overall linearly specified regression is fairly significant at both the 5% and 1% levels since the calculated F-statistic (5.10) is greater in value than

[21] For i, two instances are considered. The nominal, values are used as well as 'index' values. The [redacted] calculated by dividing the series by 1977 value and [redacted] iplying the result by 100.

[22] Significant [redacted] used here is not in a statistical sense.

the tabulated 2.96 (at 5%) and 4.69 (at 1%). None of the explanatory variables is significant except per capita income (proxied by per capita consumption). With the formulation using nominal values of the rate of interest, the price variable (P_n/P_c) and the tax variable (t) do not have the expected signs in addition to being statistically insignificant.

4.4 Regression Results

4.4.1 Linear Specification

Table 4.1
Time Series results of the Linear Specification

Dependent Variable K_h/N	Equations 1	2
Constant	-0.0054 (-0.1403)	-0.0042 (-0.0263)
P_n/P_c	0.0126 (1.1636)	0.0126 (1.1614)
C/N	0.0648* (2.4094)	0.0648* (2.4103)
i	-0.0013 (-1.0566)	-0.0002 (-2.0542)
t	0.0017 (0.0097)	-0.0013 (-0.0074)
K_{h-1}/N	0.0310 (0.1991)	0.0312 (0.2009)
adjusted R^2	0.5192	0.5191
DW Statistic	1.6845	1.6832
S.E of Coeff of K_{h-1}/N	0.1557	0.1557
'h' statistic	0.9829	0.9870
F (5, 14)	5.1043	5.1016

Note: Values in parentheses are t-ratios.
* Significant at the 5% level.
Equation 1 used nominal lending rates and
2 used index lending rates.

4.4.2 Double-Logarithmic Specification

Table 4.2
Time Series result of the Double-Logarithmic Specification

Dependent Variable ln K_h/N	Equations 1	2
Constant	-1.0611 (-1.0184)	-3.3380 (-0.1936)
ln P_M/P_C	0.2917 (1.667)	0.2885 (1.6575)
ln C/N	1.1671* (2.4438)	1.2973* (2.7149)
ln i	-0.3913 (-1.0033)	-0.3659 (-0.9740)
ln t	-0.0010 (-0.1416)	-1.2118 (-0.3818)
ln K_{h-1}/N	0.2778 (1.4130)	0.2832 (1.4700)
adjusted R^2	0.6219	0.6257
D.W Statistic	1.9258	1.94553
S.E of Coeff of K_{h-1}/N	0.1966	0.1926
'h' Statistic	0.3138	0.2185
F 5, 13	6.9218	7.0167

Note: Values in parentheses are t-ratios.
* Significant at the 5% level.
Equation 1 used nominal lending rates and
2 used index lending rates.

However, the tax variable has the expected sign when its 'index'value is used; the price variable still maintaining the wrong sign.

The logarithmic specification also gives quite a good overall significance. When nominal interest and tax rates are used the sign of the relative price remains wrong while all others are correct. Again, only the income is significant at 5% level.

It is possible that the positive sign on the price variable reflects 'supply effects'. The case may also be that the price variable derived by dividing the prime building cost index by the consumer price index is inadequate.

Test for autocorrelation could not be carried out using the usual Durbin-Watson statistic because of the presence of lagged dependent variable regressor. An alternative h-test has been employed. This has been possible because the product $nv(\hat{\alpha})^{23}$ where n is the sample size and $v(\hat{\alpha})$ the variance of the coefficient of the lagged dependent variable is less than one in all cases. The test establishes the absence of autocorrelation at both 5% and 1% levels of significance of the standard normal variate.[24]

The interpretation of our results will proceed with the admission of some other limitations usually encountered in most empirical work, more so those saddled with data inadequacy such as this.

23 When a lagged dependent regressor occurs $h = (1-d/2)\sqrt{(n/1-nv(\hat{\alpha}))}$ has been proposed for the case $nv(\hat{\alpha})<1$. Another proposition has been made for $nv(\hat{\alpha})>1$ but this is for large samples. In the formula d=DW value for the first order autocorrelation.

24 In fact, h has a standard normal distribution. Both the linear and logarithmic OLS specifications show no autocorrelation.

CHAPTER FIVE

CONCLUSION

This concluding chapter summarises the entire study infering from both the qualitative and the econometric results. Policy measures are suggested for consideration and future research courses charted.

5.0 Summary

An attempt is made in this study to investigate the housing market in Ghana with special emphasis on demand. The Ghanaian housing market, like those of most developing countries is imperfect. Households in income categories other than the highest income do accept housing which does not meet their expectations. Though data on housing structural types are suspect they tend to, in broad terms, indicate serious inadequacy of the housing stock both in quality and quantity.

Public sector has been quite involved in the provision of housing to meet the ever increasing demand for housing. This has been done through parastatal organizations. However, most of these agencies have been beset by problems of managerial inefficiency, lack of finance and unnecessary political interference. Therefore, they could not find their feet in order to satisfy the needs for which they were established. In large part, the private sector dominates by providing housing for private households operating through acquisition of building materials and building gradually over time.

The inability of the supply-side (delivery systems) to meet effective demand over the years has created strains on existing infrastructure, especially in the urban areas. In [redacted] is more qualitative in nature with the rate of required improvement, replacement and additions to the housing stock virtually falling to

insignificant levels.

Housing finance in Ghana has not made adequate impact in the housing market. Though some form of savings/loans societies as well as a building society exist they could not cope with the fluctuations of the macroeconomic environment and have become moribund in the early part of the 70s to date. Bank lending towards housing was not appreciable. The inception of the Economic Recovery Program in 1983 saw the attempt to revive the mortgage system as part of a general financial sector reform. The Home finance Company was established in 1990 in response. During an integral part of the post independence years, therefore, credit availability for housing can be said to be rationed. High rates of inflation coupled with political instability that characterised most of the years during the period make for lending to the housing sector insecure. Total credit availability to housing has therefore been rather low.

In determining the state of housing in any country, housing policy is crucial. A review of housing policy in Ghana reveals that in all post-independence development plans policy has focused on supply-side. That is, provision of affordable houses to meet the increasing need by the growing population. Government's envisaged provision of sites and services' as well as squatter upgrading schemes have not been successful. The result is the ever growing squatter settlements in unplanned environments under insanitary conditions. City expansion by far leads the provision of basic utilities like water, electricity and access roads.

Resulting from political tensions and unstable macroeconomic environment, housing policy though apparently emphasizing almost identical contents has not been co-ordinative; implementa has rather been ad hoc from one political regime to another.

One noticeable feature is the neglect of rental housing in the various housing policies. Housing programs have been intended for ownership than rental.

The econometric aspect of this study, despite inherent weaknesses, brings to the fore the importance of income as the sole variable that significantly influences the stock-demand for housing in Ghana. From the double-logarithmic specification, the stock-demand elasticity with respect to income, approximated by consumption, is found to be greater than one. This indicates a generally income elastic demand.

In all the estimations, the interest rate, the property tax and relative price are not statistically significant. The non-significance of the interest rate may be a confirmation of the unimpressive role played by mortgage finance in the housing sector. As regards the property tax, it could be said that in most cases payments are honoured in breach than in observance. Political instability has contributed also to inability to strictly enforce payment. Due to the fact that the market has been regulated mostly through rent controls, price seems not to have played any significant role.

5.1. Policy Implications and Recommendations

Apart from the income variable, all other variables viz price, tax and interest rate are not significant at neither the 5.0% nor 1.0% levels. Directly from the logarithmic specifications, we see the stock-demand elasticity with respect to income being greater than 1 (i.e. 1.2 to 1.3). Hence, demand for housing in Ghana is income elastic. This indicates that income increases will generate housing expenditures increasing as a proportion of income ie expenditures increase absolutely and as a per cent of income. Further, this suggests that housing is regarded as more important by consumers on the

than all other uses of their income. This perhaps explains why in Ghana

towards the reduction of sub-standard housing (slum clearance or squatter

upgrading) is quite slow. Another implication is that a subsidy for general income support which allows consumers complete freedom in allocating their expenditures will be quite effective in raising levels of housing consumption.

The price mechanism has not played an enormous role in allocating housing in the economy. Price distortions as shown by Argawala (1983) might have also accounted for this. The socialist ideological inclination that has characterized most of the post-independent periods, including that covered by the estimation is a plausible cause as well. The solution to housing problem was addressing 'need' rather than effective demand.

As real incomes increase the effective demand for housing in Ghana is likely to increase. Efforts must therefore be made to step up investment in housing to close the gap between the desired and actual stocks. The series of constraints that impair the expansion of supply must be identified. There is a clear need for a major overhaul of many of the government policies and regulations such that housing supply may be more responsive to demand. Prime candidates for revision include land policy (especially urban), rent control, housing standards and building codes. Housing policy must be discriminatory so that subsidies are given to only those who really are needy. Thus, the poor could be provided improved infrastructure. The approval process for home building should be streamlined.

Several policy interventions are needed in the field of housing finance in order to expand the currently low level of available housing finance. Many innovations are necessary in the housing delivery system so that much of the existing housing stock can graded in addition to new starts, and that housing finance can also reach the poor.

5.2 Limitations of the study

Proceeding to the end of this study, it is expedient to warn about some shortcomings with regard to the econometric analysis. Some limitations of this study include:

(1) the use of aggregate data which are likely to introduce aggregative bias,

(2) the official statistics used may tend to underestimate the values of the variables used such as the total gross residential capital formation and the prime building cost index because of the large informal sector and because new construction statistics fail to count upgrading, maintenance,and depreciation of existing units,

(3) a system of equations could have been better in modelling the housing market from which to estimate the demand,

(4) most of the variables used could also be seen largely as possible to operate at the supply side hence introducing an identification problem,

(5) the homogeneity of housing units assumed for the analysis is not tenable. In fact housing units differ by type, location and size,

(6) the use of population as the sole demographic variable may not be appropriate and also interest rate alone cannot capture credit conditions,

(7) the period of estimation is not long enough to bring to light the true behaviour of demand.

This is by no means an exhaustive list[25] but a good representation of the possible

[25] Some studies report other criticisms of this type of analysis: de Leew (1971), Muth (1960), Polinsky (1977), Lee and Trost (1978), Rosen (1974), Strasszheim (1975).

flaws in the analysis. Granting these, the results in a modest way may contribute to an understanding of the housing demand behaviour in Ghana.

5.3 Directions for future research

Future research should aim at providing an adequate data base for housing analysis by employing as much as possible primary data. More work is required on demand for housing characteristics and on correct specification of prices.

Separate demand functions need be studied for rural and urban housing bringing into focus differences and similarities. Sectoral response to policy eg. monetary and fiscal should be given further attention qualitatively and quantitatively.

High inflation rates have characterized the economy of Ghana. The impact of inflation expectations on demand or supply of housing should be part of future efforts at exploring the housing market in Ghana.

Supply response of housing to financial deepening and remittance of income from abroad require critical analysis.

In conclusion, thus, alternative methodologies should be used to make housing analysis more technical and objective. In this way, a positive contribution could be made to ensure that housing markets function efficiently and equitably, and that houses are fit for households.

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APPENDICES

APPENDIX ONE

(A) Housing Parastatals

(a) The State Housing Corporation (SHC)

It started as the Gold Coast Housing Corporation formed under housing ordinance number 31 of 1955. This government owned organization was very active in the 1960s and 1970s in producing houses under subsidies from the government.

The corporation has been nearly dormant since 1979 with the cessation of government financing. SHC consists of eleven relatively autonomous regional operations (including two in the Accra region) and headquarters management staff. The corporation suffers immensely from managerial difficulties resulting from regional operations which are in disarray, and ineffectiveness of central management in Accra.

SHC remains one of the largest producers of housing in Ghana; it declared an annual delivery target of 2,000 units and an attained maximum delivery rate of 1,528 in 1973/74. This was mainly in response to the low cost housing scheme under Acheampong regime of the National Redemption Council (later The Supreme Military Council). It is now able to achieve an estimated output of 200 units only. This means that it is operating at 13% of current target of about 1600 units per annum.

(b) Tema Development Corporation (TDC)

he TDC was set up in 1965 to plan and develop the entire Tema municipality. mpany the development of a port and industry associated with Volta River ctric project, the Tema new town itself was established in 1952. The city of 63 square miles of land all of which is leased by the government to TDC and it not all, of which is under the development control of TDC. The main

objective of establishing TDC was to alleviate housing shortage and re-develop the slum areas of Tema into 18 communities with about 28,500 units by the end of 1985. The corporation is, however, in arrears by 7 communities and an accumulated deficit of 10,000 units. Over 16,000 housing units have been built by TDC with 7,520 retained in ownership as rental units. House building still continues in Tema by the corporation but at a pace less than 50 units per annum. In fact, there has been a shift in policy towards leasing of land for developmental construction to private developers and institutions.[24] Indeed, there has not been any addition to its housing stock during the past 2 years.

In relative terms TDC's management seems to have better information and financial controls than SHC's, at least partially because of the spatial compactness of operations. But, the basic problem of the corporation has been inadequate funding and low rents for rental units, thus, preventing the corporation from making good returns in order to maintain adequately the existing stock.

In the face of all odds, TDC is attempting to revitalize itself, through expansion of its revenues from rented units, land rents, and development fees. The corporation does not seem to envision itself as becoming a large scale developer of housing in Tema again. Rather, it intends shedding off its rental properties and focusing on planning, veloping, and servicing land for private development.

Redco

It is a real estate development subsidiary of the Bank for Housing and

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[24] This is culled from unpublished Ghana Government/Ministry of Works and Housing study titled Broadening the Economic Recovery Programme through the Housing Sector.

Construction. Since its inception in 1979 it has completed few houses despite its declared annual output of 1,000 units. Its 5,000 units, Legonman project, started since then has only produced some uncompleted single storey detached house units and few multi-storey re-inforced concrete structures at various stages of completion.

Complex management problems have beset this laudable project which enjoyed full patronage by a large number of individuals through financial contributions.

(d) The Prefab Concrete Products Ltd.

The primary concern of this company is the production of large concrete panel prefabricated housing units. These units are really meant for urban housing. In 1977, the factory was reactivated but so far has not had full patronage from the general public. The factory has the capability of building multi-storeyed structures, mainly block of flats.

ed capacity is 400 housing units per annum. However, owing to obsolescence in the nature of the factory's machines, the current capacity is 100 units per annum.

(e) Other Agencies

Other public agencies that mainly provide funds in the form of loans or budgetary ocations for housing are:

(i) First Ghana Building Society,

(ii) Public Servants Housing Loan Scheme Board,

(iii) Social Security and National Insurance Trust (SSNIT) and other financial institutions such as State Insurance Corporation (SIC) and Bank for Housing and Construction (BHC),

(iv) Central Government budgetary allocation for housing eg. nurses quarters, staff bungalows, etc.

(v) Department of Rural housing and Cottage Industries.

(These are discussed in (B) as below)

(B) Housing Financial Institutions

(i) First Ghana Building Society (FGBS)

The FGBS was established on the 15th of June, 1956 as a private society under Building Societies ordinance, 1955, but with strong government patronage. Functionally, the society operates like a savings and loan association through which savers can accumulate funds to purchase or build houses, and borrowers can obtain house-mortgage credits.

There are three main sources of finance for the society. These are:

(a) grants from the Government

(b) paid up capital and

(c) deposits from the public

Government grants have been occasional and intended to supplement equity capital and deposits from the public. Originally, the society issued three types of shares ordinary shares', 'savings shares' and 'deposit shares'.

The FGBS has, more often than not, been almost moribund. Negative real interest nake that deposits are not a significant proportion of its sources of funds. The bulk capital has been provided by government about ¢217 million as at 1989. A total only 779 loans are presently outstanding, valued at ¢143 million. Despite the non- of detailed records; it is apparent that only few loans (as few as four) in some and currently have been advanced. Obviously, FGBS is severely constrained posit and lending policies. The Society has never been an effective institution

that efficiently mobilized resources for housing. The following table gives the picture of account holders and borrowers in the recent past.

Table A.1 FGBS account holders and borrowers

	As at Dec. 1984	As at Dec. 1985	As at Dec. 1986	As at Dec. 1987
Ordinary Shares				
Number of accounts	25,400	27,900	32,860	33,016
Value (¢ million)	96.81	117. 35	158.38	191.517
Savings Shares				
Number of accounts	9,700	9,450	9,870	9,910
Value (¢million)	1.6	1.33	2.64	2.57
Mortgage Accounts				
Number of accounts	8,600	8,940	10,600	10,800
V				
Value (¢ million)	76.6	94.39	131.25	142.28

Source: Ministry of Works and Housing unpublished document.

The problems confronting FGBS, and mortgage lending in general, have been financial sector wide rather than institution specific. It is only quite recently that there is a systematic progress in the financial sector as a result of the structural adjustment program of the Economic Recovery Program.

(ii) The Public Servants Housing Loan Scheme.

This was established by National Redemption Council decree 319 in 1975. It is to apply to public servants whose salaries are paid directly by the Controller and Accountant-General. Some flexibility was introduced in which case the scheme could be extended to other public servants subject to the discretion of the Minister of Finance and Economic Planning. Those public servants having their own schemes have been

excluded.

The main objectives for the establishment of this scheme are to help public servants to:

(1) finance construction of a new residential property

(2) purchase an existing residential property,

(3) extend an existing residential property

(4) pay off a loan on a residential property already acquired.

Finance of the scheme is through government budgetary allocation and subvention. The Ministry of Finance and Economic Planning administers the funds. However, administrative allocation are forwarded through the Ministry of Works and Housing under whose umbrella the board operates.

Since its inception the amount of loans advanced as at 1990 stood at 668 million cedis. Its distribution is shown in the table below:

Table A.2 Loans advanced under the public servant's loan scheme since its inception to 1990.

Date	Amount /(₵m)
24/6/75	3.0
23/3/76	2.0
3/8/76	3.0
25/5/78	8.0
14/3/84	5.0
14/5/84	7.0
9/6/87	10.0
1/9/87	20.0
2/6/88	50.0
30/6/88	200.0
13/12/89	110.0
9/7/90	250.0
Total	668.0

Source: Compiled from documents (records) at the Public Servant's Housing Loan Scheme Board Head Office Accra.

As at 1990, 646 public servants have benefitted from the scheme. This number consisted of 445 civil servants and 201 workers of other parastal organizations.

The amount of loan advanced to a beneficiary is based on gross annual salary, and the percentage of the annual salary to be given is determined by the nature of building. The valuation of the building is done by the Architectural and Engineering Services Corporation (AESC) and recommendation made to the Board.

Repayment of the loan and interest (ie $2^1/_2\%$) on it is done by monthly deductions at source by the Controller and Accountant-General at a rate of 30 to 35 per cent of gross monthly salary depending on the salary. These deductions commence after a one year grace period. A maximum of thirty years is required for the repayment or amortization of the loan.

To offset any contingencies, the loan is insured under a mortgage protection insurance with any of the insurance companies such as; State Insurance Corporation, Vanguard Assurance, Great African Insurance Company etc. In addition, the title deeds and mortgage deeds relating to the property, duly stamped and registered are deposited with the Board.

(ii) Social Security and National Insurance Trust (and other Financial Institutions)

SSNIT is a provident fund which is currently in the process of converting to a pension scheme[27]. Began in 1965; its status as a provident fund has always meant a

[27] A provident fund is a mandatory savings scheme for workers which pays a lump sum contribution under certain predefined conditions. A pension fund pay out periodically, based on actuarial estimates of a participant's expected life-time.

temporary expedient. Conversion has, however, been delayed by political issues. Given fixed defined benefits and high recent inflation, the value of provident fund contributions has dwindled to the point where a concensus has been reached on the need for reform.[28]

The trust entered the housing scene sometime in 1978 when it began constructing a number of blocks throughout the country. Generally, these houses are constructed for purchase by individuals and organizations who are contributors to the fund. It also provides employment- tied mortgage loans, although it does not give credit for housing development by individuals.[29]

Institutional contributions have been inhibited by price ceilings imposed by the Bank of Ghana. Thus, while the SSNIT lends an important support to home building, its contribution to home finance has not been felt.

Other financial intermediaries such as the commercial banks, credit unions, insurance companies do not currently lend much for housing. This is not surprising given the risks of lending long term in a volatile economy such as Ghana. Less than 5% of the total loan portfolios are invested in housing. There is a reluctance on the part of the banks to finance housing projects which require long term lending while their deposits are short term. Moreover, in most lending cases, borrowers use houses or any other landed property as collateral security. Thus, borrowing for housing may not have an appropriate collateral secure enough to guarantee repayment.

[28] According to SSNIT's, Proposals for conversion of Social Security Provident Fund, in 1986 average retirement benefits amounted to only ¢11,000.

[29] See Strategic Plan for Greater Accra Metropolitan Area, Vol. 1991, Ministry of Local Government.

Commercial Banks, apart from the Standard Chartered Bank of Ghana, do not generally make housing finance available to companies for construction of staff quarters, or for onward lending to employees of companies. Most companies which have availed themselves of the loan facility from the Bank, have on going housing finance scheme for their employees. The table 2.4 describes terms offered by Standard Chartered Bank of Ghana to Companies on mortgage finance. The companies are customers of the bank, and they have provided mortgage of property as security.

Table A.3: Terms offered by Standard Chartered Bank Ghana Ltd to some Companies needing mortgage finance

No.	Name of Company	Amount in million cedis	Rate of Interest	Term in Years	Interest Bore by Employees
1.	Lever Brothers	6	26% p.a	25	13% p.a
2.	British Petroleum	10	26% p.a	20	10% p.a
3.	Guiness Breweries	35	28% p.a	25	14% p.a

Source: Ministry of Works and Housing document (unpublished)

It can be seen from the table that the employee housing loans scheme made no significant impact on housing activity.

(iv) Department of Rural Housing and Cottage Industries

It started from 1972 as a department of Rural Development after the abolition of Ministry of Rural Development. The department is a final merger of the former 'Roof Loans Scheme' staff from Ministry of Housing and the 'Workers Brigade and the National Service Corp.' The Department was engaged in building rural houses of about three rooms per beneficiary who belonged to a registered Rural Co-operative Housing Society. The Department, as already mentioned, was popularly known as the Department of Rural

Development, however, having realized the detailed rural development activities eg rural water, rural health and rural roads (feeder roads) development, it was thought proper to specify its functions or activities and finally name it precisely. The present name 'Department of Rural Housing and Cottage Industries' was given in 1980.

Apart from identifying itself as promoter and developer of rural housing, local building materials and their technology for using them, and actual construction and rehabilitation of rural housing, it has recently concentrated on rehabilitation of rural or cottage houses erosion, promotion and development of cottage industries to improve the economic status of the rural folks.

Credit facilities for rural housing delivery have been advanced to rural folks. These types of credit are:

1. Roof Loans Scheme (for new houses)
2. Wall Protection Scheme (rehabilitation program)
3. Rural Co-operative houses (for rural housing co-operatives; 10 houses of 3 rooms per project in one village selected)

The roof loans scheme gave out loans ranging in value ¢200 to ¢5,000 as the maximum amount per applicant between 1956 and 1981 (See table A.4).

Table A.4 Maximum amount per applicant between 1956 and 1981

Year of Loan	Maximum Amount per Applicant (¢)
1956/57	200
1970	800
1974	1,200
1984	5,000

Source: DRHCI

As with the roof loans, the wall protection loans attract the same maximum amounts per applicant over the period except that it commenced in 1970.

From the resumé of programs in table A.5, it is clear that the total amount of loans ¢21,770,858.52 advanced has not been very high enough to have made any appreciable impact on the level of financial intermediation in the housing sector.

Table A.5 Summary of Operations of the Department of Rural Housing

PROGRAM	PERIOD FROM	PERIOD TO	WEATHER ON-GOING YES	WEATHER ON-GOING NO	NO. OF COMMUNITIES SERVED	NO. OF INDIVIDUALS SERVED	TOTAL LOANS GRANTED (¢)	TOTAL LOANS RECEIVED (¢)
1. Co-operative Houses	1974	1985	-	NO	106	1,016	17,298,419	9,633,463
2. Wall Protection Loans	1956	1985	-	NO	-	14,007	4,472,390	3,134,942
3. Roof Loans								
GRAND TOTAL							21,770,859	

Source: Ibid.

APPENDIX TWO

Time Series Values of the variables used in the estimation equation

Year	1970	1971	1972	1973	1974	1975	1976	1977	1978
Population (Thousand)	8614	8790	9027	9543	9815	10094	10401	10718	11044
Total Consumption (million cedis) in 1977 prices	96.89	104.72	114.49	113.25	119.38	96.84	101.51	100.46	94.04
Gross Residential Capital formation (million cedis) in 1977 prices	5.79	6.22	3.96	5.97	8.80	6.26	4.14	4.62	3.44
Interest (lending) Rate - nominal	9	9	12	10	10	12.5	12.5	12.5	19
Interest (lending) Rates - Index	72	72	96	80	80	100	100	100	152
Marginal Property Tax Rates (pesewas per cedi)	0.0146	0.0146	0.0138	0.0138	0.0138	0.0138	0.0138	0.0138	0.0138
Prime Building Cost Index (1977= 100)	24.57	25.42	illegible	illegible	47.44	69.84	illegible	100	155.7
Consumer price Index (1977= 100)	98.6	98.7	illegible	illegible	illegible	100	100	100	173.7

Appendix Table contd.

Year	1979	1980	1981	1982	1983	1984	1985
Population (Thousand)	11380	11169	11456	11750	12052	12361	12719
Total Consumption (million cedis) in 1977 prices	94.67	88.89	79.55	74.05	104.85	103.63	107.73
Gross Residential Capital formation (million cedis) in 1977 prices	4.07	4.44	3.61	2.61	2.81	4.33	5.89
Intrest (lending) Rate-Nominal	19	19	19	19	19	21.17	21.2
Interest (lending) Rate-Index	152	152	152	152	152	169	169
Marginal property tax rates (pesewas per cedi)	0.0138	0.0548	0.0548	0.0548	0.0274	0.0274	0.0547
Prime building cost index (1977=100)	242.0	371.6	636.9	744.0	1784.8	3835.2	5998.1
Consumer price index (1977=100)	267.3	401.2	868.6	1062.4	2367.4	3304.2	3647.2

Appendix Table contd.

Year	1986	1987	1988	1989
Population (Thousand)	12050	13390	14130	14570
Total Consumption (million cedis) in 1977 prices	113.26	118.06	121.27	144.53
Gross Residential capital formation (million cedis) in 1977 prices	4.95	5.81	6.00	8.49
Interest (lending) Rate-nominal	20.0	25.5	25.6	25.6
Interest (lending) Rate - index	160	204	205	205
Marginal property tax rates (pesewas per cedis)	0.0550	0.0550	0.003	0.003
Prime building cost index (1977 = 100)	8170.1	11546.7	14265.8	18345.8
Consumer price index (1977=100)	4543.1	6352	8344	10449

Sources: United Nations: National Accounts Statistics; Analysis of Main Aggregates (1986), African Statistical Yearbook, West Africa (1985) and Ghana Statistical Service; Quarterly Digest of Statistics (various issues), Accra Metropolitan Authority, Records.